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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,115	07/10/2003	Han-Lim Lee	5000-1-381	2604
33942	7590	04/15/2005		EXAMINER
CHA & REITER, LLC 210 ROUTE 4 EAST STE 103 PARAMUS, NJ 07652				SONG, SARAH U
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 04/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/617,115	LEE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Sarah Song	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 27 January 2005.  
 2a) This action is **FINAL**.                            2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-8 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-8 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 10 July 2003 is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
     Paper No(s)/Mail Date \_\_\_\_\_

4) Interview Summary (PTO-413)  
     Paper No(s)/Mail Date. \_\_\_\_\_

5) Notice of Informal Patent Application (PTO-152)

6) Other: \_\_\_\_\_

## DETAILED ACTION

1. Applicant's communication filed on January 27, 2005 has been carefully considered and placed of record in the file. Claim 1 has been amended. Claims 1-8 are pending.

### *Specification*

2. The disclosure is objected to because of the following informalities: in line 13 of page 3, Examiner suggests deletion of either "incurs" or "has".

Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peral et al. (U.S. Patent Application Publication 2002/0076132) in view of Onaka et al. (U.S. Patent 5,696,859).**

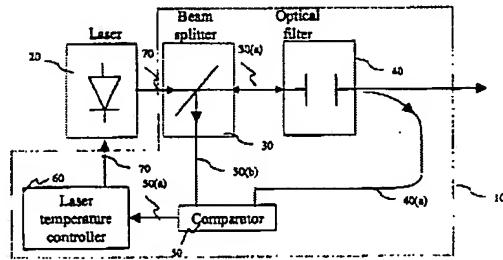
5. Regarding claim 1, Peral et al. discloses an optical transmitter for converting signals into optical signals and transmitting the optical signals using optical fibers, the optical transmitter comprising:

- an electric signal generator 50 to convert a received signal into an electric signal;
- a distributed feedback laser diode 20 to convert an electric signal into an optical signal;

- and an optical filter 40 configured to filter the optical signal using a central wavelength corresponding to '1' level of the optical signals, perform a vestigial side band modulation of the optical signal by degenerating a determined band of the optical signal using the central wavelength, and reduce the power of '0' level of the optical signals.

See Paragraphs [0021] and [0023]; Figures 2a, 2b and 2c.

6. Peral et al. discloses that the optical filter 40 may be an etalon or a fiber Bragg grating, but does not expressly disclose the optical filter to be an optical tunable filter. However optical tunable filters are well known in the art. In fact, fiber Bragg grating characteristics are well known in the art to fluctuate with ambient temperatures.



7. Onaka et al. discloses an optical tunable filter 18 for maintaining the desired filtering characteristics (see column 6, lines 28-31).

8. Peral et al. and Onaka et al. are analogous art as pertaining to LD transmitters.

9. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an optical tunable filter as disclosed by Onaka et al. in the device of Peral et al.

10. One of ordinary skill in the art would have been motivated to provide a tunable filter in order to ensure operational stability of the optical filter 40 and to preserve the optimum characteristics of the filter.

11. Regarding claim 2, the vestigial side band modulated optical signal is transmitted using the optical fibers. See Paragraph [0005].

12. Regarding claim 3, the optical tunable filter is further configured to enable setting the central wavelength. See Paragraph [0027] ("center wavelength of a particular filter may be optimized...") and [0031] ("fiber Bragg grating may then be designed in accordance with initial design parameters...").

13. Regarding claim 4, the central wavelength is set such that the power of the optical signals which have passed through the optical tunable filter is reduced at the side band. See Figures 2a, 2b and 2c.

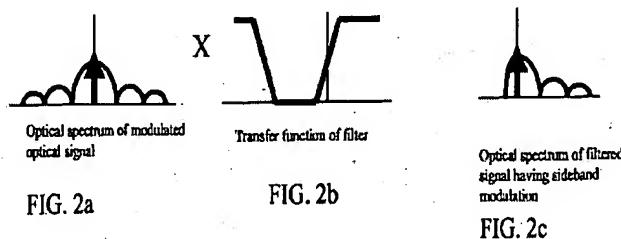


FIG. 2a

FIG. 2b

Optical spectrum of filtered signal having sideband modulation

FIG. 2c

14. Regarding claims 5-7, Peral et al. discloses the optical transmitter, wherein when the optical tunable filter sets the central wavelength to a peak portion of the optical signals, the power of a first logical level of the optical signals which have passed through the optical tunable filter is not reduced, but the power of a second logical level thereof is reduced. The first logical level is a logical one level of the optical signals; the second logical level is a logical zero level of the optical signals. See figures 2a, 2b and 2c.

15. Regarding claim 8, Peral et al. does not expressly disclose optical transmitter wherein the central wavelength set by the optical tunable filter is substantially larger than the central wavelength of the optical signals by 0.1 nm. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to set the central wavelength of the filter such that it is substantially larger than the central wavelength of the optical signals

by 0.1 nm, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. See MPEP 2144.05(II)(B).

*Response to Arguments*

16. Applicant's arguments filed January 27, 2005 have been fully considered but they are not persuasive. Applicant states that nowhere in Peral, or in combination with Onaka, teaches the feature of "when the optical tunable filter sets the central wavelength near the peak portion corresponding to the '1' level of the optical signals, the power of the '1' level of the optical signals is not reduced but the power of the '0' level thereof is reduced."
17. As noted in the rejection above, Peral et al. clearly disclose filter having a central wavelength near the peak portion corresponding to the '1' level of the optical signals, the power of the '1' level of the optical signals not being reduced but the power of the '0' level thereof being reduced in Figures 2a, 2b and 2c.
18. Although Peral et al. does not expressly disclose the optical filter to be tunable. However, tunable optical filters are well known in the art. Tunable devices are generally known for enabling specific tailoring of device characteristics to optimize performance of the device. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an optical tunable filter in the device of Peral et al. in order to ensure operational stability of the optical filter 40 and to preserve the optimum characteristics of the filter.
19. Applicant also states that Peral et al. teaches suppressing one side of the side bands of the modulated optical carrier to reduce the effect of group velocity dispersion. Applicant further states that neither reference teaches suppressing only the power of the "0" level, as recited in the

amended claims. Examiner agrees that Peral et al. teaches suppressing one side of the side bands of the modulated optical carrier. However, Examiner disagrees that neither reference teaches suppressing only the power of the '0' level, as recited in the amended claims. Figure 2c shows suppression of only the power of the '0' level, which is the side band.

20. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to provide tenability to the filter of Peral et al. was within the knowledge generally available to one of ordinary skill in the art.

21. Regarding Applicant's statement directed toward the use of the band-pass filter of the present invention, it appears the device of Peral et al. achieves the same results. Nonetheless, intended use recitations do not differentiate a claimed apparatus from the prior art apparatus satisfying the claimed structural limitations.

### *Conclusion*

22. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

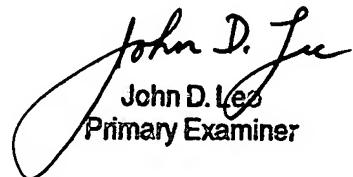
the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sarah Song whose telephone number is 571-272-2359. The examiner can normally be reached on M-Th 7:30am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on 571-272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Sarah Song  
sus

  
John D. Lee  
Primary Examiner